Mehr Licht!
More Photonics for Intelligence

#D08

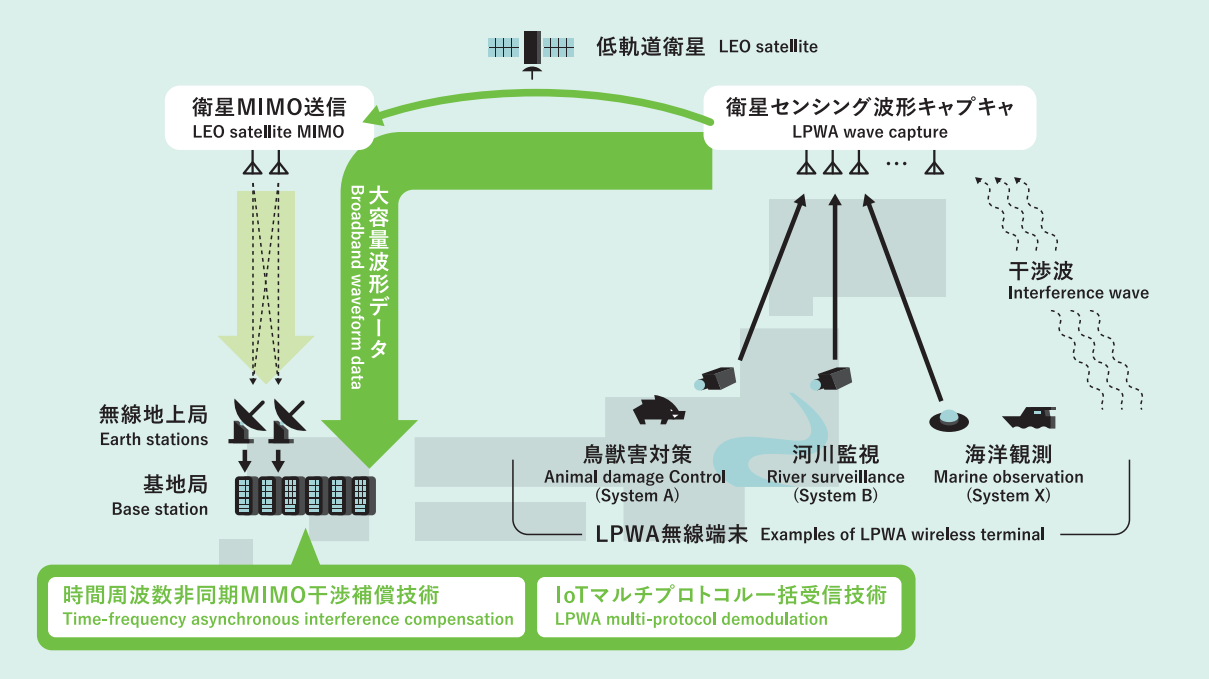
#Resilience#Digital Inclusion#Open Innovation

High-Capacity LEO MIMO/IoT Demo

MIMO/IoT for high-capacity and massive connectivity in LEO satellites

Technical Challenges & Goals

We aim to enhance feeder-link capacity and achieve massive service-link connectivity for future satellite networks. LEO satellite MIMO enables scalable capacity expansion using multiple GW antennas. Satellite sensing enables direct satellite access without a base station and supports diverse IoT devices across protocols.



Key Technologies

Core Technologies

- LEO satellite MIMO: Spatial multiplexing to distributed antennas with delay/Doppler-shift compensation
- Satellite sensing: Multi-antenna signal aggregation and beamforming for simultaneous demodulation

Key Differentiators

- World's first LEO satellite MIMO demonstration, scaling capacity with antenna count
- Protocol-free satellite sensing enables diverse IoT services and massive connectivity by beamforming

Use Cases

Aerospace & Defense

LEO satellite MIMO can be applied to LEO broadband, direct-to-mobile, IoT services, and Earth observation satellites. It increases data capacity, enabling high-throughput communications and transfer of high-resolution observation data.

Exhibitors

NTT Access Network Service Systems Laboratories
NTT Network Innovation Laboratories

External Partners

Japan Aerospace Exploration Agency (JAXA)

Related Links

https://group.ntt/jp/newsrelease/2026/04/15/260415a.html
https://group.ntt/jp/newsrelease/2023/02/10/230210a.html

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